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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/997,646	11/28/2001	Teruaki Okino	4641-61349	7416

7590 12/11/2003

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EXAMINER
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SMITH, ZANDRA V

ART UNIT	PAPER NUMBER
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2877

DATE MAILED: 12/11/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/997,646

Applicant(s)

OKINO ET AL.

Examiner

Zandra V. Smith

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 2 and 6-13 is/are rejected.
- 7) ☒ Claim(s) 3-5 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Priority***

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

### ***Claim Objections***

Claim 12 is objected to under 37 CFR 1.75(c) as being in improper form because claim 12 fails to provide an active method step. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

Claims 1-2, 6-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over ***Suzuki (6,573,515)***.

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention "by another"; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in

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accordance with 37 CFR 1.321(c). For applications filed on or after November 29, 1999, this rejection might also be overcome by showing that the subject matter of the reference and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person. See MPEP § 706.02(l)(1) and § 706.02(l)(2).

As to **claims 1, 2, 7-10, and 12-13**, Suzuki discloses a charged particle beam projection-exposure system, comprising:

an illumination optical system (1,3) to direct charged particles onto a region of a reticle (10), the reticle having low-scattering regions (57) and high-scattering regions (59); and

a projection optical system (12) downstream the illumination optical system to direct the beam to a substrate, the projection optical system comprising a first projection lens (5) closer to the substrate, a second projection lens (14), closer to the substrate, and a cut-off plate (17) between the reticle and the back focal plane of the first projection lens, the cut-off plate defining an aperture to block propagation of the patterned beam scattered from the high-scattering regions of the reticle (col. 7, lines 2-50, col. 8, line 60-col. 9, line 10, and fig. 3).

Suzuki differs from the claimed invention the cut-off plate is not disclosed as blocking at least 90 % of the scattered beam, however since beams scattered from the high scattered region may cause distortions in the image, it would have been obvious to one having ordinary skill in the art at the time of invention to block 90% of the scattered beam.

As to **claims 2 and 11**, Suzuki discloses everything claimed, as applied above, in addition the cut-off plate is located between the first projection lens and the back focal plane (see fig. 3).

As to **claim 6**, Suzuki discloses everything claimed, as applied above, in addition the charged particle beam is an electron beam (col. 7, line 10). Suzuki fails to provide the acceleration voltage, however it would have been obvious to one having ordinary skill in the art at the time of invention to provide an accelerating voltage of 50kV since controlling the beam voltage will help to maintain resolution of the pattern elements by controlling the penetration depth of the electrons.

*Allowable Subject Matter*

Claims 3-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art of record, taken alone or in combination, fails to disclose or render obvious the cut-off plate assembly including multiple cut off plates.

*Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

*Pfeiffer et al. (5,674,413)*

*Fax/Telephone Information*

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Zandra V. Smith whose telephone number is (703) 305-7776. The examiner can normally be reached on 8:00 a.m. - 4:30 p.m..

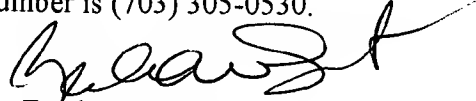
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (703)308-4881. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-0530.



Zandra V. Smith  
Primary Examiner  
Art Unit 2877